

**New York State Department of Environmental Conservation
Division of Environmental Remediation**

50 Wolf Road
Albany, NY 12233-7010

SITE SUMMARY REPORT



UNITED STATES DEPARTMENT OF DEFENSE (COMPANY ID# 2025)

**NEW YORK STATE AIR NATIONAL GUARD - HANCOCK FIELD
SYRACUSE, NEW YORK (SITE ID # 313)**

**FORT DRUM - SURFACE AIR GROUND ENVIRONMENT COMPLEX - HANCOCK FIELD
SYRACUSE, NEW YORK (SITE ID # 263)**

**FORT DRUM - AREA MAINTENANCE SUPPORT ACTIVITY #9
MATTYDALE, NEW YORK (SITE ID # 312)**

**FORT DRUM - SEWARD ARMED FORCES RESERVE CENTER
MATTYDALE, NEW YORK (SITE ID # 311)**

Onondaga Lake Project

June 2000

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LIST OF ACRONYMS AND ABBREVIATIONS

138th FS	138th Fighter Squadron
174th FW	174 Fighter Wing
AFR Center	William H. Seward Armed Forces Reserve Center
AMSA #9	Area Maintenance Support Activity No. 9
BGS	Below the Ground Surface
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
DOD	United States Department of Defense
ECA	Environmental Compliance Assessment
ESA	Environmental Site Assessment
FDMR	Fort Drum Military Reservation
FFY	Federal Fiscal Year
HIA	Syracuse-Hancock International Airport
IRP	Installation Restoration Project
JP-4	Jet Propulsion Fuel #4
JP-8	Jet Propulsion Fuel #8
µg/L	micrograms per liter
µg/L-v	micrograms per liter-vapor
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
NYANG	New York Air National Guard
NYSDEC	New York State Department of Environmental Conservation
PAHs	Polyaromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
POL Area	Petroleum, Oil, Lubricants Area
ppb	Parts Per Billion
ppm	Parts Per Million
RI/FS	Remedial Investigation/Feasibility Study
TOC	Total Organic Carbon
TPHs	Total Petroleum Hydrocarbons
SAGE	Surface Air Ground Environment
SPDES	State Pollution Discharge Elimination System
SVOCs	Semivolatile Organic Compounds
U.S.	United States
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

INSTALLATION RESTORATION PLAN (IRP) SITE LISTING

Site 1	FT-1 Fire Training Area
Site 2	D-3 Disposal Site
Site 3	D-1 Disposal Site
Site 4	D-5 Disposal Site
Site 5	S-1 Transformer Storage Area
Site 6	S-3 Pesticides Storage Area
Site 7	SP-1 Old Spill Area
Site 8	D-2 Disposal Site
Site 9	D-4 Disposal Site
Site 10	S-2 Hazardous Material Storage Site B/759
Site 11	WT-1 Sand Filter Beds
Site 12	WT-2 Sand Filter Beds
Site 13	Septic Tank System
Site 14	Oil/Water Separators
Site 15	Petroleum, Oil, Lubricants Area

1.0 SITE DESCRIPTION

Hancock Field, a military defense base, currently encompasses approximately 359 acres and is home to the 174th Fighter Wing (174th FW) of the New York Air National Guard (NYANG). Hancock Field is also home to the Surface Air Ground Environment (SAGE) Complex, a communications center for the military, which is operated by the United States (U.S.) Army through the 10th Mountain Division (Light Infantry) and Fort Drum in Fort Drum, New York. The facility is presently broken up into four separate parcels of land, three of which are controlled by the NYANG. As part of an Installation Restoration Program (IRP) at the facility, commenced in 1982 and still active, 15 IRP sites have been identified, many of which are on property now not owned by the NYANG or the U.S. Army. These 15 IRP sites will be discussed in detail below. As of 1993, the 174th FW has used General Dynamics F16C/D "Fighting Falcons" aircraft with conventional weapons to conduct its primary military operations.

For the purposes of this report, the New York State Department of Environmental Conservation (NYSDEC) is considering the former Fort Drum Military Reservation (FDMR) Area Maintenance Support Activity No. 9 (AMSA #9) facility and the FDMR William H. Seward Armed Forces Reserve Center (AFR Center), as part of Hancock Field. This is mainly due to the geographical locations of the former AMSA #9 facility and the AFR Center in relation to Hancock Field.

The former AMSA #9 facility includes a one-story, 7500 square foot masonry building which contained offices and a vehicle maintenance garage. Asphalt and gravel parking lots are located to the northwest and west of the building.

The AFR Center is currently used as a training center for Army and Marine Corps reserve units. The AFR Center consists of several buildings, asphalt parking lots and grass medians. The main structure is a two-story brick building. A storage building and a maintenance garage are located approximately 150 feet northwest and 150 feet northeast, respectively, from the main building.

1.1 Location

The 174th FW, NYANG, Hancock Field is located at 6001 East Molloy Road in the Town of DeWitt, Onondaga County in central New York approximately five miles north of the City of Syracuse. The main portion of the facility adjoins Syracuse-Hancock International Airport (HIA) to the north, is bordered to the east and south by the Town of DeWitt, to the north by the Town of Cicero and by the Town of Salina to the west. Two separate tracts of land are located to the north of the main base, and northeast and adjacent to the HIA.

The SAGE Complex is located at 510 Stewart Drive West, west and adjacent to the northern most tract of land operated by the NYANG.

The former AMSA #9 facility was located at 130 Pickard Drive in Mattydale, New York. Hancock Field is located approximately 4000 feet to the northeast. The property is bordered to the northeast by Pickard Drive, to the northwest by an easement for overhead power lines and to the southwest by land owned by New York State as part of the Thruway (I-90).

The AFR Center is located at 1099 Molloy Road in Mattydale, New York in the central portion of Onondaga County. Hancock Field is adjacent to the facility to the east and north.

1.2 Local Geology

As the subsurface geology for the areas being addressed can vary significantly depending on location, the following provides a general description of such conditions at, and in the vicinity of, Hancock Field. The same holds true for the discussion of local hydrogeology (Section 1.4).

The bedrock beneath the area consists of fractured and jointed shale of the Vernon Formation. The bedrock is generally overlain by glacial till which consists of a mixture of silt, clay, gravel, cobbles, and boulders. The till acts as a confining unit for the bedrock aquifer. However, at one location in the northern portion of the base, formerly operated by the U.S. Air Force, the glacial till was observed to be absent. The till is overlain by glacial fluvial sediments which, depending on location, include sand, sand and gravel, silt and clay, etc.

1.3 Local Surface Hydrology

Hancock Field is drained by overland flow directed to local streams. The eastern and southern portions of Hancock Field drain to the North Branch of Ley Creek or its unnamed tributaries, the northern portion drains to unnamed tributaries of Mud Creek, and the western section of the Syracuse-Hancock International Airport drains to Beartrap Creek and its unnamed tributaries. The North Branch of Ley Creek itself traverses the southeastern portion of the facility in a southwesterly direction. Beartrap Creek discharges to Ley Creek which is a tributary of Onondaga Lake. Mud Creek drains to the Oneida River which is not a tributary of Onondaga Lake.

Several wetland areas in the vicinity of Hancock Field have been identified by the NYSDEC. These wetlands drain to tributaries of or directly to Mud Creek, Beartrap Creek and the North Branch of Ley Creek. Two of the wetlands lie in portion or completely on Hancock Field property.

1.4 Local Hydrogeology

Shallow groundwater in the eastern portion of the area generally flows to the south, east, or southeast toward Ley Creek or the North Branch of Ley Creek. It is believed that groundwater in the western portion of the area flows toward Beartrap Creek and/or its tributaries. Bedrock groundwater levels measured during March of 1997 indicate that groundwater in the bedrock unit, in the vicinity of Disposal Sites D-1 and D-3, was flowing to the northeast.

As discussed above, the shale bedrock beneath this area is generally under confined conditions due to its being overlain by glacial till. This is evidenced by the upward hydraulic gradient between the bedrock and overburden units which was noted during March of 1987 in the vicinity of Disposal Sites D-1 and D-3. Locally, the highly conductive shallow units of sand or sand and gravel may also be confined where they are overlain by silts and clays.

2.0 SITE HISTORY

Hancock Field, originally known as Syracuse Army Air Base, was built in 1942, as a staging area for warplanes bound for England. Army Air Forces left the base in 1946, and the 138th Fighter Squadron (138th FS), NYANG remained as the sole military occupant of the base until the Air Force returned in 1952 with the Headquarters of the 32nd Air Division. In 1984, the 138th FS became part of the larger 174th FW. In 1986, the U.S. Army assumed responsibility for the SAGE Complex from the U.S. Air Force. Both the mission and physical size of Hancock Field have been reduced from those initially established during World War II. All but three tracts of land in the northern portion of the facility (formerly owned by the U.S. Air Force) are owned by Onondaga County. The southern portion of the facility has remained relatively unchanged in size, and is controlled by the 174th NYANG, along with the two of the three remaining parcels of land from the northern portion of the base.

The AMSA #9 facility at 130 Pickard Drive in Mattydale, New York was operated by the U.S. Army in conjunction with the FDMR in Fort Drum, New York. The property was leased by FDMR from 1967 to 1994. In 1994, the AMSA #9 facility was moved to the existing McConnell U.S. Army Reserve Center in Liverpool, New York.

The AFR Center facility was originally constructed in the late 1950's and was expanded in 1974 and 1976 for the West and East Wings of the main building, respectively.

2.1 Owners and Operators

The United States government owns the property on which the NYANG and Army conduct their missions at Hancock Field. The NYANG, which is part of the United States Department of Defense (DOD) and is a governmental agency within New York State, operates three of the four parcels of land known as Hancock Field. All but three parcels of land on the northern portion of the base, formerly operated by the U.S. Air Force, are currently owned by Onondaga County. One of these parcels of land is the SAGE Complex. Prior to 1987, two areas of property on the northern portion of the base (land not currently used by the NYANG or the Army) and Thompson Road were leased from the City of Syracuse. No information was obtained regarding ownership of the land prior to 1942, when Hancock Field was constructed.

Table 2-1 depicts the owners of the property at 130 Pickard Drive (former AMSA #9 facility) from February of 1950 to May of 1995 (date of the Facility Investigation Report). The FDMR leased the property from 1967 through 1994.

TABLE 2-1

Date of Transfer	Title Holder	
	Previous	New
February 21, 1950	United States of America	Frances P. Pickard
January 29, 1960	Frances P. Pickard	Roy Pickard
November 18, 1960	Roy Pickard	F&S Rental
October 2, 1967	F&S Rental	Robert and Helen Stacy
June 11, 1969	Robert and Helen Stacy	Helen Stacy
October 2, 1972	Helen Stacy	The White Laundry & Dry Cleaning Co., Inc.
October 20, 1986	The White Laundry & Dry Cleaning Co., Inc.	K.S. Parmelee

The AFR Center was constructed in the late 1950's. No information was obtained on ownership of the property. The facility is operated by the U.S. Army in conjunction with the FDMR in Fort Drum, New York.

2.2 Site Operations

The 174th FW, NYANG currently uses General Dynamics F16C/D "Fighting Falcons" aircraft in its primary mission of providing military defense. Other NYANG operations that take place at the facility in support of its primary mission include small arms training, equipment maintenance (e.g., aircraft systems, communications, armaments, vehicles, etc.), fuel storage, oil/water separation from floor and vehicle washing, and storage of hazardous materials prior to off-site transportation and disposal. The SAGE Complex is used as a communications center for the military.

The AMSA #9 facility was used for the servicing and repair of military vehicles, primarily trucks. This included changing of vehicle fluids (e.g., transmission fluid and oil) and vehicle washing. Used oils were collected into drums and stored until disposed of offsite by a contractor. Vehicle washing was suspended in 1992 after an environmental investigation discovered that the shop floor drain discharged directly to the environment without an oil/water separator.

The AFR Center is operated by the U.S. Army in conjunction with the FDMR as a training center for Army and Marine Corps reserve units. A maintenance garage exists onsite approximately 150 feet northeast of the main building. Prior to the AFR Center converting from fuel oil to natural gas for heat in 1993, the storage of No. 2 fuel oil and diesel fuel in underground storage tanks (USTs) also took place at the facility.

2.3 Generation and Disposal of Wastes

In 1987 and 1994, Hancock Field was considered to be a small quantity generator. All other years, Hancock Field did not produce enough hazardous waste to be considered a small quantity generator. Currently, wastes generated from Hancock Field, as part of the NYANG activities, are stored at the Hazardous Waste Storage Area (IRP Site 10) prior to off-site disposal by a contractor. Wastes are generated from various base activities including maintenance of aircraft, vehicles, armaments, communication systems and other general maintenance activities, weapons cleaning, painting and fuel storage. Some of the wastes generated at the Base include medical wastes, oil absorbent solids, lacquer thinner, isopropyl alcohol, Jet Propulsion Fuel #8 (JP-8), gasoline, diesel fuel, asbestos, batteries and antifreeze. From 1948 to 1985, varying amounts of battery acid was neutralized and discharged to the sanitary sewer. Batteries are currently recycled by an off-site contractor. Since 1948, aircraft deicing has occurred intermittently during cold weather. Deicing material generally discharges through surface runoff to the North Branch of Ley Creek. In 1994, propylene glycol replaced ethylene glycol as aircraft deicer. A State Pollution Discharge Elimination System (SPDES) permit is being developed by the DEC for storm water runoff at the facility which will contain, in part, propylene glycol discharge limits from deicing procedures.

Wastes generated by the SAGE Complex as part of Army activities are also transported offsite for disposal by a contractor.

As part of the IRP investigation conducted at Hancock Field since 1982, 15 sites have been identified as potentially contributing releases to the environment. The IRP sites are described below.

Site 1, the FT-1 Fire Training Area, occupies 0.75 acres of land and is located roughly 1,500 feet south of the HIA east-west runway and 1,250 feet west of the North Branch of Ley Creek. Site 1 was used for fire training exercises from 1948 to 1985. Training was conducted once a month (every 3 to 6 months after 1975) and approximately 100 to 150 gallons of waste fuels (including waste oils, paint thinners, solvents and JP-4) were burned (only clean JP-4 fuel was burned after 1980). After the fuels were completely burned the area was flushed with water. The water discharged into a storm water drainage ditch that leads to the North Branch of Ley Creek.

Site 2 (D-3 Disposal Site) covers approximately 12 acres, consists of three separate areas and is located southwest of the housing area. Site 2 was used from the 1950's to 1979 for the disposal of general refuse, construction rubble, minor quantities of hazardous waste (e.g., liquid paint residues) and sanitary waste treatment sludge. The site has been covered with several feet of soil and vegetation.

Site 3 (D-1 Disposal Site) is located south of Stewart Drive, north of the rifle range and east of Watertown Road, and covers approximately 10 acres of land. Two settling ponds at the site were used to treat sanitary waste from the late 1950's to the early 1960's. From the 1960's to 1974, Site 3 was used for the disposal of general refuse, construction rubble and minor quantities of hazardous waste (e.g., paint thinner residues and partially empty drums of waste solvents and pesticides). As with Site 2, the site has been covered with several feet of soil and vegetation.

Site 4 (D-5 Disposal Site) is located approximately 350 feet south of HIA and 3,000 feet west of the North Branch of Ley Creek, and encompasses approximately 0.35 acres. The D-5 Disposal Site was used from 1950 to 1976 for the disposal of construction rubble, sod, empty drums, ammunition boxes and possibly some drums containing hazardous wastes (e.g., solvents and paint thinners). The Site 4 is covered with approximately 2 feet of soil and vegetation.

Site 5 (S-1 Transformer Storage Area) is located at the corner of South and Third Streets, approximately 125 feet northwest of the HIA, and covers roughly 0.1 acres. The property was used from 1976 to 1980 to store as many as nine transformers at one time, and has been transferred to Onondaga County for the planned expansion of the HIA. Leaks have occurred

from the transformers in the past, and two of the transformers were determined to be contaminated with polychlorinated biphenyls (PCBs). In 1980, the PCB contaminated transformers were moved to Site 10 (S-2 Hazardous Material Storage Site B/759).

Site 6 (S-3 Pesticides Storage Area) comprises about 0.1 acres and is located in the former northwest corner of the U.S. Air Force Base near Bucks Harbor Road. The site formerly included a 500-gallon concrete UST (removed in November, 1989), and was used from 1975 to 1985 to store rinse water from pesticide container and equipment cleaning activities, as well as wash down from entomology shop operations. Prior to its removal, the tank was subject to infiltration of groundwater during wet weather, and it is believed that some of the tank-stored rinse water leaked to the surrounding environment.

Site 7 (SP-1 Old Spill Area) is a storm sewer outfall that drains surface water from the vicinity of the SAGE Complex and floor drains from the Power Plant Building (Building 503) of the SAGE Complex. Site 7 is located approximately 200 feet east of Dover Avenue and 250 feet north of Stewart Drive. This property has been transferred to Onondaga County for the planned expansion of the HIA. On occasions, from 1956 to 1973, fuel oil was mistakenly discharged directly to the storm sewer from the Power Plant Building. In 1972, an existing 30,000-gallon tank was converted into an oil/water separator to prevent further fuel discharges to the storm sewer system. In 1973, soil contaminated with fuel oil was removed from the storm sewer ditch, and the area was backfilled with clean soil.

Site 8 (D-2 Disposal Site) covers 3 acres and is located south of Stewart Drive near the Fire Station. The area, previously wetland, was used from 1970 through 1974 for the disposal of construction debris. In 1973, an unknown quantity of waste slaked-lime material, with a pH near 12, was disposed of at Site 8. The site is covered with several feet of local soil and vegetation.

Site 9 (D-4 Disposal Site) is located east of Thompson Road and south of Stewart Road, and was used during the 1950's and 1960's for the disposal of construction debris. The 0.06 acre site is covered with several feet of soil and vegetation.

Site 10 (S-2 Hazardous Material Storage Site B/759) covers roughly 0.5 acres and is located in Building 759, at the corner of Avenue D and 16th Street. This area has been used since 1980

for the storage of hazardous materials prior to transportation and off-site disposal. The building has concrete floors and an 8 inch high concrete dike that surrounds the storage area. No known spills have occurred at Site 10.

Sites 11 and 12 (WT-1 and WT-2 Sand Filter Beds, respectively) were used during the early 1950's and late 1950's to early 1960's, respectively, to treat sanitary wastes generated at the Base. Each area covers approximately 0.5 acres. Site 11 is located south of Avenue D and Site 12 is located north of Hancock Drive.

Site 13 (Septic Tank System) includes eight septic tanks, four of which are in operation and four have been closed. The septic tanks are located throughout the Base, and each tank covers an area of approximately 300 square feet.

Oil/Water Separators (Site 14) are located throughout the Base. As of March 1, 1995, nine oil/water separators were in use at the facility, one oil/water separator was closed, one was out of service and two were under construction. Oil recovered from the oil/water separators is sold to a contractor for reclamation, and the wastewaters are discharged to the sanitary sewer.

Site 15 [Petroleum, Oil, Lubricant Area (POL Area)] consists of one 215,000-gallon aboveground tank, six 25,000-gallon USTs, a fuel pumping building, and systems for accepting and delivering fuel to tanks. The site covers 2.5 acres and has been in use since 1980 to store petroleum, oil and lubricants. Three spills have occurred in the POL Area. A PCB release occurred prior to the 1980's, presumably from transformers located in the vicinity of the POL Area, and two jet fuel releases also occurred in this area, one of JP-4 fuel (2,000 gallons) in January 1990, and the other of JP-8 fuel (150 gallons) in June 1994.

Other Locations:

The former AMSA #9 facility on Pickard Drive in Mattydale, New York, generated waste oils and fluids from military vehicle maintenance. These wastes were collected into drums and disposed of offsite by a contractor. During the late 1960's, a portion of the property (wetland area) to the west and south was filled with construction road debris by the site owner. In 1994, the FDMR conducted an environmental site investigation in which various types of debris were discovered in test pit excavations. The debris included wires, electrical cable, aluminum cans,

strips of metal and wood. Vehicle and garage floor washing was conducted onsite until approximately 1992. Washwater from these activities was not collected, and drained directly to the environment.

In March of 1993, a spill of No. 2 fuel oil occurred at AFR Center during the filling of the 2,000-gallon UST. The spill was estimated to be 10 to 20 gallons of fuel oil, and a soil removal of approximately 15 cubic yards was conducted. During the soil removal, free product was discovered in the soil from previous spills or tank leakage. No other information was given about the generation or disposal of wastes at the AFR Center.

3.0 POTENTIAL PATHWAYS FOR RELEASE OF HAZARDOUS SUBSTANCES TO THE LAKE SYSTEM

3.1 Soil

Soil at Hancock Field was found to be contaminated primarily with pesticides in the Pesticides Storage Area, polyaromatic hydrocarbons (PAHs), lead and total petroleum hydrocarbons (TPHs) in the Fire Training Area, and JP fuel and PCBs in the POL Area. A soil gas survey conducted in the Fire Training Area also showed high levels of benzene and toluene. Benzene and toluene were not detected in surface soil samples, however, as stated in the April, 1990 Fire Training Decision Document, this could be the result of contamination volatilization due to sample homogenization (sample mixing) conducted in the field prior to containerization. The contamination from the Fire Training Area and the POL Area results in a potential for transport of these contaminants to the North Branch of Ley Creek by erosion due to surface water runoff during precipitation events and migration of contaminants through groundwater. Surface runoff from the Pesticides Storage Area discharges to a tributary of Mud Creek, which does not discharge to the Onondaga Lake System. In addition, a soil removal was undertaken in the Pesticides Storage Area in 1996. Approximately 312 cubic yards of soil, based on a 4220 square foot contamination area, 2 feet in depth, contaminated with pesticides was removed to below NYSDEC cleanup levels and incinerated off-site. A contaminant assessment of the Transformer Storage Area was conducted by analyzing six soil samples in June of 1989. The highest concentration of PCBs found in the Transformer Storage Area was 0.098 mg/kg. No soil samples were obtained from the landfill disposal areas (IRP Sites 2-4, 8 and 9).

In addition to the above potential pathways for the release of hazardous substances from soil, minor quantities of hazardous substances were disposed of in three disposal areas at Hancock Field. In IRP Site 2 (D-3 Disposal Site) liquid paint residue was disposed, in IRP Site 3 (D-1 Disposal Area) paint thinner residues and partially empty drums of waste solvents and pesticides were disposed, and in IRP Site 4 (D-5 Disposal Site) drums containing solvents and paint thinners were potentially disposed. These sites have been covered with several feet of soil and vegetation. The soil contamination at these sites results in a potential for these contaminants to migrate through groundwater to the North Branch of Ley Creek and its tributaries. However, as stated below in Section 3.3, groundwater sampled in the vicinity of IRP Sites Nos. 2-4 indicated that these disposal areas were not contributing contamination to the environment which risked either human health or the environment.

Soil at the former AMSA #9 facility was found to be contaminated primarily with chrysene, benzo(a)anthracene and benzo(a)pyrene in one of the five surface soil samples, soil from one of four test pit excavations was contaminated primarily with total xylenes, and a soil gas survey indicated two petroleum hydrocarbon anomalies at the site. One anomaly showed diesel fuel characteristics on the southeast side of the building, near a garage floor drain, and the other anomaly, located west of the building in an area filled in 1967 and covered with gravel, showed gasoline characteristics. The contamination from the soil at the facility results in a potential for transport of these contaminants to a wetland area adjacent and west of the site, and eventually to the North Branch of Ley Creek by erosion due to surface water runoff during precipitation events and by migration of contaminants through groundwater.

An investigation conducted at the AFR Center in 1994 concluded that 120 cubic yards of soil in the vicinity of a former No. 2 fuel oil tank and 180 cubic yards of soil in the vicinity of a former diesel storage tank should be excavated due to contamination from the former USTs.

3.2 Surface Water

As stated in Section 3.1, there is a potential for the transport of contaminants from the Fire Training Area and the POL Area to the North Branch of Ley Creek due to erosion from surface water runoff during precipitation events. Surface water samples obtained in the immediate vicinity of the Fire Training area in 1989, also contained PAHs, as did the soil samples

discussed above in Section 3.1. Surface water in the vicinity of the Fire Training Area eventually discharges into the North Branch of Ley Creek. Surface water samples in the vicinity of the POL Area were obtained and analyzed for volatile organic compounds (VOCs) and TPHs in 1990. Sample results of the surface water were non-detect for both VOCs and TPHs. Surface water sampled in the vicinity of other IRP Sites (Nos. 2-4 and 7) at Hancock Field indicated that these IRP Sites were not contributing contamination to the environment which risked either human health or the environment. In addition, the NYANG has State Pollution Discharge Elimination System (SPDES) permits for storm water runoff and deicing activities through 7 outfalls. Of these 7 outfalls, 6 discharge or eventually discharge into the North Branch of Ley Creek and one discharges into Mud Creek (which is not a tributary to the Onondaga Lake watershed).

Also, as stated in Section 3.1, there is a potential for transport of contaminants from the former AMSA #9 facility to a wetland area adjacent and west of the site, and eventually to the North Branch of Ley Creek by erosion due to surface water runoff during precipitation events. Flow from the wetland area is conveyed through a drainage pipe, approximately 100 feet southeast of the building, under I-90 to the North Branch of Ley Creek.

3.3 Groundwater

As discussed in Section 4.2, groundwater at the facility contains various contaminants. Groundwater samples collected at Hancock Field from the Fire Training Area in 1989 contained lead, methylene chloride, TPH and xylenes at maximum concentrations of 10 µg/L, 26 µg/L, 10 mg/L and 1.0 µg/L, respectively. Groundwater sampling conducted in the vicinity of the POL Area has determined the nature and extent of a PCB Aroclor 1260 plume and a benzene, toluene, ethylbenzene and xylene (BTEX) plume (from historic jet fuel spills). The groundwater plume in the vicinity of the POL Area has not reached the North Branch of Ley Creek or impacted any of its tributaries. Groundwater sampled in the vicinity of other IRP Sites (Nos. 2-4 and 6) at Hancock Field indicated that these IRP Sites were not contributing contamination to the environment which risked either human health or the environment.

One of three groundwater samples collected at the AMSA #9 facility as part of an environmental investigation in 1994, contained contaminants above NYSDEC Ambient Water

Quality Standards and Guidance Values. The contaminants were benzene, total xylenes and vinyl chloride at 10, 13 and 3 µg/L, respectively. Benzene and total xylenes were also detected in the soil gas survey conducted in this area. Groundwater from the site likely discharges into the wetland area west of and adjacent to the former AMSA #9 facility. Surface water from the wetland area eventually discharges into the North Branch of Ley Creek.

No groundwater samples were collected as part of the 1994 environmental investigation at the AFR Center. Soil was determined to be contaminated (above NYSDEC guidance values) below the water table. There is potential for the dissolution of No. 2 fuel oil and diesel fuel from the contaminated soil into the groundwater, and transport of these contaminants to the North Branch of Ley Creek or one of its tributaries.

3.4 Air

As of July of 1995, the 174th FW had in effect 10 air permits which were issued by the DEC. These air permits are for the base's paint booths, fuel systems, welding operations, life support, Hydrazine Building, Non-Destructive Inspection Shop and Battery SVS. The NYANG 104(e) report does not indicate what processes are conducted in the Hydrazine Building nor does it specifically describe the Battery SVS process. The report does, however, list an Electric/Battery/Environmental Systems Building which generates spent Lithium, Nickel-Cadmium and Mercury batteries as part of equipment maintenance.

3.5 County Sewer System

From 1945 until 1985, neutralized battery acid was discharged by Hancock Field to the sanitary sewer. After 1985, batteries were recycled by an off-site contractor. In 1993, 275 gallons of propylene glycol was accidentally released to the sanitary sewer. Steps were taken by the NYANG to prevent further discharges of propylene glycol to the sanitary sewer system.

4.0 LIKELIHOOD OF RELEASE OF HAZARDOUS SUBSTANCES TO THE LAKE SYSTEM

4.1 Documented Releases

Historical Releases

As stated above, in Section 3.5, from 1945 until 1985, neutralized battery acid was discharged by Hancock Field to the sanitary sewer. Also, in 1993, 275 gallons of propylene glycol was accidentally released to the sanitary sewer.

Approximately 25 spills have occurred at Hancock Field, of which all but 4 had been remediated at the time of the NYANG's 104(e) response. Of the 4 remaining spills, 275 gallons of propylene glycol were discharged to the sanitary sewer, 2 separate JP-4 spills are being investigated as part of the POL Area Remedial Investigation (RI), and the remaining spill was remediated as part of the soil removal conducted at the Pesticide Storage Area (IRP Site 6) in 1996, after the 104(e) response was submitted. Groundwater data collected in the POL Area indicates that the extent of contamination has not yet reached the North Branch of Ley Creek or its tributaries.

Table 9-2 of the NYANG 104(e) response states that fire training activities, which were conducted in the Fire Training Area (IRP Site 1) from 1948 to 1985, used approximately 150 to 300 gallons of waste oil and JP-4 fuel (clean JP-4 fuel was used exclusively after 1980) on a monthly basis (every 3 to 6 months from 1975 to 1985). Table 9-2 also states that after the fuels were burned, the area was flushed with water, and the runoff discharged to Ley Creek [North Branch].

From 1948 until 1994, ethylene glycol, propylene glycol and potassium acetate, were used in airplane deicing operations at Hancock Field. These chemicals discharged to the North Branch of Ley Creek via surface runoff. Since 1994, the facility has used only propylene glycol for deicing.

In 1992, the U.S. Army conducted an Environmental Compliance Assessment (ECA) of AMSA #9. As a result of the ECA, the AMSA #9 covered a shop floor drain that went directly to the environment without an oil/water separator. In 1993, the FDMR decided to conduct an

Environmental Site Assessment (ESA) to evaluate whether past practices by AMSA #9 may have caused any environmental degradation. The ESA included a soil gas survey which indicated a diesel anomaly on the southeast side of the building near the garage floor drain.

The AFR Center contained a 2000-gallon No. 2 fuel oil UST and a 500-gallon diesel fuel UST, located west and adjacent to the maintenance garage. These USTs were removed in 1993 as part of the facility's conversions from fuel oil to natural gas. In 1994, a soil boring investigation was conducted to assess possible contamination due to historic releases from the No. 2 fuel oil tank. This investigation included EnSys field test screening of soil for TPHs and laboratory analysis of soil for VOCs and base/neutral semi-volatile organic compounds (SVOCs). Groundwater analysis was not conducted as part of this investigation. The Underground Storage Tank Investigation Report (Woodward-Clyde, 1995) concluded that 120 cubic yards of soil on an average depth of 6 feet below the ground surface (BGS) in the vicinity of the former No. 2 fuel oil tank, and 180 cubic yards on average depth of 7 feet BGS in the vicinity of the former diesel tank should be excavated due to soil contamination caused by past releases from the USTs.

Ongoing Releases

The NYANG has SPDES Permits for storm water runoff and de-icing activities which eventually drain into the three local creeks mentioned above. Outfalls ANG #1, ANG #2, ANG #4, ANG #5 and ANG #7 discharge to the North Branch of Ley Creek, outfall ANG #6 discharges to Mud Creek (which is not a tributary to the Onondaga Lake watershed) and outfall ANG #3 discharges to Syracuse-Hancock International Airport outfall HIA-E (which also discharges to the North Branch of Ley Creek).

As of July of 1995, the 174th FW had been issued 10 air permits by the DEC. These air permits are for the base's paint booths, fuel systems, welding operations, life support, Hydrazine Building, Non-Destructive Inspection Shop and Battery SVS. The NYANG 104(e) report does not indicate what processes are conducted in the Hydrazine Building nor does it specifically describe the Battery SVS process. The report does, however, list an Electric/Battery/ Environmental Systems Building which generates spent Lithium, Nickel-Cadmium and Mercury batteries as part of equipment maintenance.

There are no known documented ongoing releases at either the former AMSA #9 facility or the AFR Center.

4.2 Threat of Release to the Lake System

At Hancock Field, two areas of concern, the Fire Training Area and the POL Area, continue to pose a threat of release of hazardous substances to the environment. Groundwater plumes of PCBs and JP fuel, with maximum concentrations in groundwater of 0.62 µg/L and 3020 µg/L, respectively, are migrating from the POL Area. However, the extent of these plumes has been defined, and the contamination as of the date of this sampling (June of 1994) has neither reached nor impacted the North Branch of Ley Creek or its tributaries. In 1990, a soil removal occurred in the POL area following a JP-4 spill. Subsequent to the removal, the area was backfilled with crushed stone. Soil contaminated with PCB at concentrations up to 240 ppm (samples were obtained in November and December of 1990) and potentially JP fuel, however, still exists in the vicinity of the POL Area. There remains a potential for transport of these contaminants from surface soil to the North Branch of Ley Creek by erosion due to surface water runoff during precipitation events. A Remedial Investigation/Feasibility Study (RI/FS) of the POL Area is currently underway.

There is the likelihood of historical transport of site contaminants into the lake system from the Fire Training Area due to fire training activities, which included washing of the area into the adjacent drainage ditch after fire training activities occurred, and the lack of a berm surrounding the area. There may also be a threat of release to the lake system from contamination remaining on-site. A soil gas survey conducted in 1988 at the Fire Training Area showed high levels of benzene and toluene. Benzene and toluene were not detected in surface soil samples, however, as stated in the April, 1990 Fire Training Decision Document, this could have resulted from volatilization of the contaminants due to sample homogenization (sample mixing) conducted in the field prior to sample containerization. Groundwater samples collected at Hancock Field from the Fire Training Area in 1989 contained lead, methylene chloride, TPH and xylenes at maximum concentrations of 10 µg/L, 26 µg/L, 10 mg/L and 1.0 µg/L, respectively. Surface water and sediment samples obtained in the immediate vicinity of the Fire Training area in 1989, also contained PAHs, as did the soil samples discussed above in Section 3.1. Surface water in the vicinity of the Fire Training Area eventually discharges into the North Branch of Ley Creek.

As part of the IRP sampling conducted in the late 1980's, sediment samples were obtained from various ditches throughout Hancock Field and analyzed for contamination. Sediment samples were slightly elevated above the NYSDEC sediment criteria lowest effect levels in 8 of 21 samples for arsenic, lead, copper and/or cadmium. Only lead was elevated above the NYSDEC sediment criteria severe effect level for metals and at only one location.

Soil at the former AMSA #9 facility was found to be contaminated primarily with chrysene, benzo(a)anthracene and benzo(a)pyrene in one of the five surface soil samples, soil from one of four test pit excavations was contaminated primarily with total xylenes, and a soil gas survey indicated two petroleum hydrocarbon anomalies at the site. One soil gas anomaly showed diesel fuel characteristics on the southeast side of the building, near a garage floor drain, and the other anomaly, located west of the building in an area filled in 1967 and covered with gravel, showed gasoline characteristics. The contamination from the soil at the facility results in a threat of release of these contaminants to a wetland area adjacent and west of the site, and eventually to the North Branch of Ley Creek by erosion due to surface water runoff during precipitation events. Flow from the wetland area is conveyed through a drainage pipe, approximately 100 feet southeast of the building, under I-90 to the North Branch of Ley Creek. Groundwater from the site likely discharges into the wetland area west of and adjacent to the former AMSA #9 facility. One of three groundwater samples collected at the AMSA #9 facility as part of an environmental investigation in 1994, contained contaminants above NYSDEC Ambient Water Quality Standards and Guidance Values. The contaminants were benzene, total xylenes and vinyl chloride at 10, 13 and 3 µg/L, respectively.

An investigation conducted in 1994 pertaining to the former USTs at the AFR Center concluded that 120 cubic yards of soil in the vicinity of a former No. 2 fuel oil tank and 180 cubic yards of soil in the vicinity of a former diesel storage tank should be excavated due to contamination from the former USTs. The soil removal is scheduled to be conducted sometime during FFY 1998-1999. No groundwater samples were collected as part of the 1994 environmental investigation at the AFR Center. Soil was determined to be contaminated (above NYSDEC guidance values) below the water table. There is potential for the dissolution of No. 2 fuel oil and diesel fuel from the contaminated soil into the groundwater, and the threat of transport of these contaminants to the North Branch of Ley Creek or one of its tributaries.

5.0 POTENTIAL FOR ADVERSE IMPACTS TO THE LAKE SYSTEM DUE TO A RELEASE OR THREAT OF A RELEASE

5.1 Hazardous Substance Characteristics

The primary contaminants of concern at Hancock Field are JP fuel compounds (e.g. BTEX and other petroleum hydrocarbons) and PCBs in the POL Area, and PAHs in the Fire Training Area. Some volatile organics (e.g. benzene, toluene and xylene) may also exist in the Fire Training Area. Contaminants of concern at the former AMSA #9 are xylene, diesel fuel, gasoline, and some PAHs, and the primary contaminants of concern at the AFR Center are diesel fuel and No. 2 fuel oil. Factors which govern the extent of a potential impact to the lake system from the above compounds include contaminant mobility, toxicity, persistence and the degree to which it can bioaccumulate.

Mobility

PCBs generally have limited mobility in the environment since PCBs have a low vapor pressure and low water solubility. In addition, because of high octanol-water partition coefficients and strong adsorption to soils and sediment, significant leaching of PCBs from soils does not occur under most conditions. NYSDEC TAGM #4046, Appendix A, Table 3, lists 10 ppm as the soil cleanup objective to protect groundwater. PCBs adhering to sediment or soil particles may also be mobilized by surficial or storm water passing over the sediment or soil.

VOCs such as BTEX compounds rapidly volatilize into the atmosphere where photooxidation produces hydrochloric acid, carbon monoxide, carbon dioxide and carboxylic acid. In surface waters, dissolved VOCs will rapidly volatilize into the atmosphere where photooxidation will occur. In soil, BTEX compounds are considered very mobile under most subsurface conditions and will readily leach into groundwater. BTEX solubilities are relatively high, giving these compounds a high mobility in groundwater.

PAH compounds, compounds containing two or more aromatic (benzene) rings, are typically

formed during the incomplete burning of fossil fuel (e.g., JP fuel), garbage or other organic matter. PAH compounds typically have low mobility in the environment. Solubilities for PAHs decrease rapidly as the number of benzene rings in the compound increases. Napthalene, with two rings, is relatively soluble in water (34.4 mg/L) while, benzo(a)pyrene, with five rings is relatively insoluble (0.0038 mg/L). PAHs have high adsorption coefficients and will adsorb onto sediment particles, especially organic matter, so that sediment transport is an important fate process for these compounds. There is some evidence that photooxidation can be an important fate mechanism for PAHs. However, the process may be inhibited by adsorption onto organic matter so that in water with high suspended matter contents (e.g., eutrophic waters), the relative importance of photooxidation as a fate mechanism is dependent on the environmental conditions (USEPA, 1979).

Toxicity

PCBs have been demonstrated to cause toxicological responses including carcinogenic, reproductive, teratogenic, neurological/developmental, systemic and immunological effects. PCBs are considered probable human carcinogens based on hepatocellular carcinomas in rodent studies and inadequate yet suggestive evidence of excess risk of liver cancer in humans by ingestion and inhalation or dermal contact.

Epidemiological studies have linked benzene with leukemias, and it is classified as a suspected human carcinogen. Chronic exposure to benzene primarily effects the blood-forming tissues, resulting in increased blood counts, followed by aplastic anemia. Toluene is not classified as a carcinogen in humans or animals. Chronic exposures to toluene can result in effects on the liver, kidneys and central nervous system. Ethylbenzene has been shown to be teratogenic in laboratory animals. No carcinogenic effects have been documented for xylenes, however, possible teratogenic effects have been observed. Chronic exposure to xylenes can result in effects on the liver, kidneys and central nervous system.

Napthalene is a PAH containing two aromatic rings. Limited data exist for naphthalene, which is not classifiable as to human carcinogenicity, based on no human data and inadequate data from animal bioassays (IRIS, 1997). Phenanthrene, anthracene and fluoranthene each contain three aromatic rings. Limited data exist for each substance, which are each not

classifiable as to human carcinogenicity, based on no human data and inadequate data from animal bioassays (IRIS, 1997). For fluoranthene, data from skin painting bioassays were judged inadequate because no increases in incidences of tumors were observed and the tested group sizes were too small. Benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, pyrene and chrysene each have four aromatic rings. Pyrene is not classified as a human carcinogen, whereas benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene and chrysene are classified as probable human carcinogens based on experimental data. Benzo(a)pyrene is a five ring aromatic PAH. Long-term exposure to benzo(a)pyrene in animal studies has resulted in the induction of cancer by all routes for which humans would normally expect to be exposed. Benzo(a)pyrene is classified as a probable human carcinogen and is one of the most toxic PAHs.

Persistence

PCBs are persistent in the environment due to their high stability and relative inertness. In aquatic systems, low amounts of PCBs are found dissolved in the water column due to their low solubility and preferential partitioning to suspended matter and sediment. In these systems, PCB transport and persistence is governed by the particle transport processes. In systems such as Onondaga Lake, PCBs are expected to persist in the bottom sediments since there are no significant sediment removal processes. PCBs have been known to degrade to a limited extent via dechlorination in anaerobic sediments, but this process is limited in its ability to eliminate the majority of the PCB mass. Aerobic degradation is also known to occur, but this process is generally limited to the lightest PCB congeners. Given the relatively heavy congeners found in the aroclor mixture found on site (Aroclor 1260), these natural degradation processes would not be expected to greatly affect the persistence of PCBs released from the site.

In surface waters and surface soils, VOCs will predominantly volatilize into the atmosphere where they rapidly degrade. In subsurface soils, where volatilization does not readily occur, VOCs are much more persistent. VOCs will also leach from soils into the groundwater. Once in the groundwater, VOCs will not readily volatilize and are relatively persistent.

PAHs, and particularly the longer-ringed PAHs, are relatively persistent in the environment. The dissolved fraction of PAHs can undergo rapid photolysis in surface waters, however, this is inhibited by the strong adsorption characteristics of PAHs. In addition, PAHs are persistent in groundwater.

Bioaccumulation

PCBs are highly lipophilic and tend to bioaccumulate within living organisms. Significant levels of PCBs may often be detected in tissue of biota living in contaminated areas because PCBs adhere to the organisms lipids (fatty tissue). The higher the concentration of PCBs in the organism, the greater the potential for the organism to show toxic responses because of the PCBs.

The potential for VOCs to bioaccumulate in organisms has been found to be low. Toluene has not been found to bioaccumulate.

PAHs have shown rapid uptake rates in aquatic organisms from zooplankton to fish. PAHs with two to four rings are readily metabolized and excreted by organisms. PAHs with five rings are also readily bioaccumulated in organisms, but the rate of metabolism is much slower than PAHs with two to four rings (USEPA, 1979).

5.2 Quantity of Hazardous Substance

Approximately 2,000 pounds of PCB and JP fuel contaminated soil were removed from the POL Area. The soil was excavated in 1990 after a JP fuel spill which also occurred in 1990, and the soil was disposed of offsite in 1995. No information was given on the remaining quantity of hazardous substances in the POL Area, and no estimations were determined for other quantities of hazardous substances which may have impacted or threaten to impact the lake system from other sources at Hancock Field.

Quantities of Hazardous substances were not discussed in documentation received by the Department regarding the former AMSA #9 facility. An investigation conducted at the AFR

Center in 1994 concluded that 120 cubic yards of soil in the vicinity of a former No. 2 fuel oil tank and 180 cubic yards of soil in the vicinity of a former diesel storage tank should be excavated due to contamination from the former USTs.

5.3 Levels of Contaminants

Environmental investigations conducted at Hancock Field have determined that soil and groundwater contamination exist at the facility. PCBs in soil and groundwater exist in the POL Area at a maximum concentrations of 240 ppm and 0.62 ppb, respectively. In addition to PCB groundwater contamination from the POL Area, JP fuel, at a maximum concentration of 3,020 ppb also exists in the groundwater.

A soil gas survey conducted in 1988 at the Fire Training Area showed levels of benzene, toluene and total VOCs at 4400 ppb, 1100 ppb and 17,000 ppb, respectively. No VOCs, including benzene and toluene, were detected in surface soil samples, however, as stated in the April, 1990 Fire Training Decision Document, this could have resulted from volatilization of the contaminants due to sample homogenization (sample mixing) conducted in the field prior to sample containerization. Soil samples collected in 1988 contained lead and total petroleum hydrocarbons at maximum concentrations of 120 ppm and 2,300 ppm, respectively. In addition, soil samples collected in 1987 contained PAHs including anthracene, benzo(a)anthracene, benzo(a)pyrene, chrysene and pyrene, among others, at maximum concentrations of 1.1, 1.8, 2.4, 1.6 and 4.5 ppm, respectively. Groundwater samples collected at Hancock Field from the Fire Training Area in 1989 contained lead, methylene chloride, TPHs and xylenes at maximum concentrations of 10 µg/L, 26 µg/L, 10 mg/L and 1.0 µg/L, respectively. Surface water and sediment samples obtained in the immediate vicinity of the Fire Training area in 1989, also contained PAHs. The PAHs in the sediment samples included anthracene, benzo(a)anthracene, benzo(a)pyrene, chrysene and pyrene, among others, at maximum concentrations of 0.51, 2.46, 1.8, 2.13 and 3.93 ppm, respectively.

Soil at the former AMSA #9 facility was found to be contaminated primarily with chrysene, benzo(a)anthracene and benzo(a)pyrene in one of the five surface soil samples at concentrations of 710, 700 and 480 ppb, respectively. Soil from one of four test pit excavations was contaminated primarily with total xylenes at a concentration of 10,000 ppb. A

soil gas survey indicated two petroleum hydrocarbon anomalies at the site. One soil gas anomaly showed diesel fuel characteristics on the southeast side of the building at concentrations above 133 micrograms per liter-vapor ($\mu\text{g/L-v}$), near a garage floor drain, and the other anomaly, located west of the building in an area filled in 1967 and covered with gravel, showed gasoline characteristics at concentrations of 600 $\mu\text{g/L-v}$. One of three groundwater samples collected at the AMSA #9 facility as part of an environmental investigation in 1994, contained contaminants above NYSDEC Ambient Water Quality Standards and Guidance Values. The contaminants were benzene, total xylenes and vinyl chloride at 10, 13 and 3 $\mu\text{g/L}$, respectively.

An investigation conducted in 1994 pertaining to the former USTs at the AFR Center consisted of soil sampling and analysis. Soil contamination included VOCs such as BTEX compounds at maximum concentrations of 850, 2100, 8900 and 56,000 ppb, respectively. Soil also contained SVOCs including anthracene, benzo(a)anthracene, benzo(a)pyrene, chrysene, naphthalene and pyrene, at maximum concentrations of 1600, 7200, 8200, 9200, 6300 and 18,000 ppb, respectively. No groundwater samples were collected as part of the 1994 environmental investigation at the AFR Center. However, soil was determined to be contaminated (above NYSDEC guidance values) below the water table.

Sampling conducted by the NYSDEC in 1996 analyzed sediment from the North Branch of Ley Creek for various compounds including PAHs. PAH compounds such as benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene existed in this sediment at maximum concentrations of 69, 52 and 46 $\mu\text{g/kg}$, respectively from the three sediment samples obtained in the North Branch of Ley Creek. These concentrations do not exceed NYSDEC sediment criteria for any of the above three compounds (390 $\mu\text{g/kg}$ for each compound) assuming three percent (3%) total organic carbon (TOC) in sediment.

5.4 Impacts on Special Status Areas

There are no known animal or plant species that are listed as threatened or endangered in the vicinity of Hancock Field as designated by the U.S. Fish and Wildlife Services or the NYSDEC. A review of the Significant Habitat Program and Natural Heritage Program files conducted by the NYSDEC indicated that there are no known endangered, threatened or special-concern

wildlife species, rare plants, animal or natural community occurrences, or other significant habitats at or adjacent to the Base. The Cicero State Game Management Area, however, is located approximately 2 miles northeast of Hancock Field. This area is used by a variety of waterfowl. In addition, there are a number of wetlands on Hancock Field and within a 3 mile radius of the Base. The North Branch of Ley Creek traverses the southeastern portion of the Base, and Ley Creek is located approximately 3,000 feet south of Hancock Field. Ley Creek is classified by the NYSDEC as a Class B watercourse in the vicinity of Hancock Field and the North Branch of Ley Creek is classified by the NYSDEC as a Class C watercourse.

The majority of land adjacent to the former AMSA #9 facility (land owned by the New York State Thruway Authority) was determined to be wetlands. It was not determined whether or not special status areas existed in the vicinity of the AFR Center or whether site contamination could impact these areas if they existed.

6.0 SUMMARY OF CONCERNS

Based on this review of Hancock Field it appears that the Fire Training Area at Hancock Field may have been a historical source of PAHs to tributaries of the North Branch of Ley Creek, and thus the Onondaga Lake system. In addition, even though fire training activities have ceased in the Fire Training Area, this locality may still be a source of contamination to tributaries of the North Branch of Ley Creek as no remedial actions have been conducted in the area. The extent of contamination in the POL Area at Hancock Field is known, and this contamination has not reached the lake system. Contamination at the POL Area, however, will continue to be a threat to the North Branch of Ley Creek, and thus the Onondaga Lake watershed, until a remedial action is taken to mitigate this threat. Sediment samples obtained and analyzed by the NYSDEC in 1996 from the North Branch of Ley Creek contained some PAH compounds which also exist on-site at Hancock Field. However, the PAHs found in sediment in the North Branch of Ley Creek could have come from a variety of sources other than Hancock Field, and the concentrations of PAHs in the sediment of the North Branch of Ley Creek were below ecological and human health levels of concerns. As of June 2000, DOD was in the process of obtaining an environmental contractor to submit a work plan to the NYSDEC. This work plan will describe further environmental investigation needed for the various sites on Hancock Field in order to select remedy for these sites.

Based on this review of the former AMSA #9 facility, it appears that military activities at the site have not impacted and do not threaten to impact the Onondaga Lake watershed. As stated above in Section 5.3, environmental investigations conducted at the facility discovered, through a soil gas survey, a minor diesel anomaly which appears to be attributable to military activities. Other contamination at the facility in fill areas seems to be linked to prior owners of the site.

Based on this review of the AFR Center, it appears that activities at the facility have not impacted and do not threaten the Onondaga Lake watershed. The site is approximately 3500 feet from Ley Creek, however, no groundwater samples were obtained from the on-site fuel spill area to determine if a groundwater plume exists.

REFERENCES

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Appendix D - Spill Reports.
Appendix G - Management Action Plan. July, 1994.
Appendix H - Engineering-Science, Inc. 1982. Installation Restoration Program, Phase I: Record Search.
Appendix I - Air Emission Permit Summary.
Appendix J - Memorandum/Recycling/Disposal Letters.
Appendix K - State Pollution Discharge Elimination System Permit Application. September, 1992.
Appendix L - Notice of Violation Letters.
Appendix N - Underground Storage Tanks.
Appendix O - Hazardous Waste Remedial Actions Program. November 1995. Installation Restoration Program, Technical Memorandum: Pesticide Storage Area, Site 6.
2. Department of Army, Headquarters, 10th Mountain Division (Light Infantry) and Fort Drum. June, 1995. 104(e) Response.
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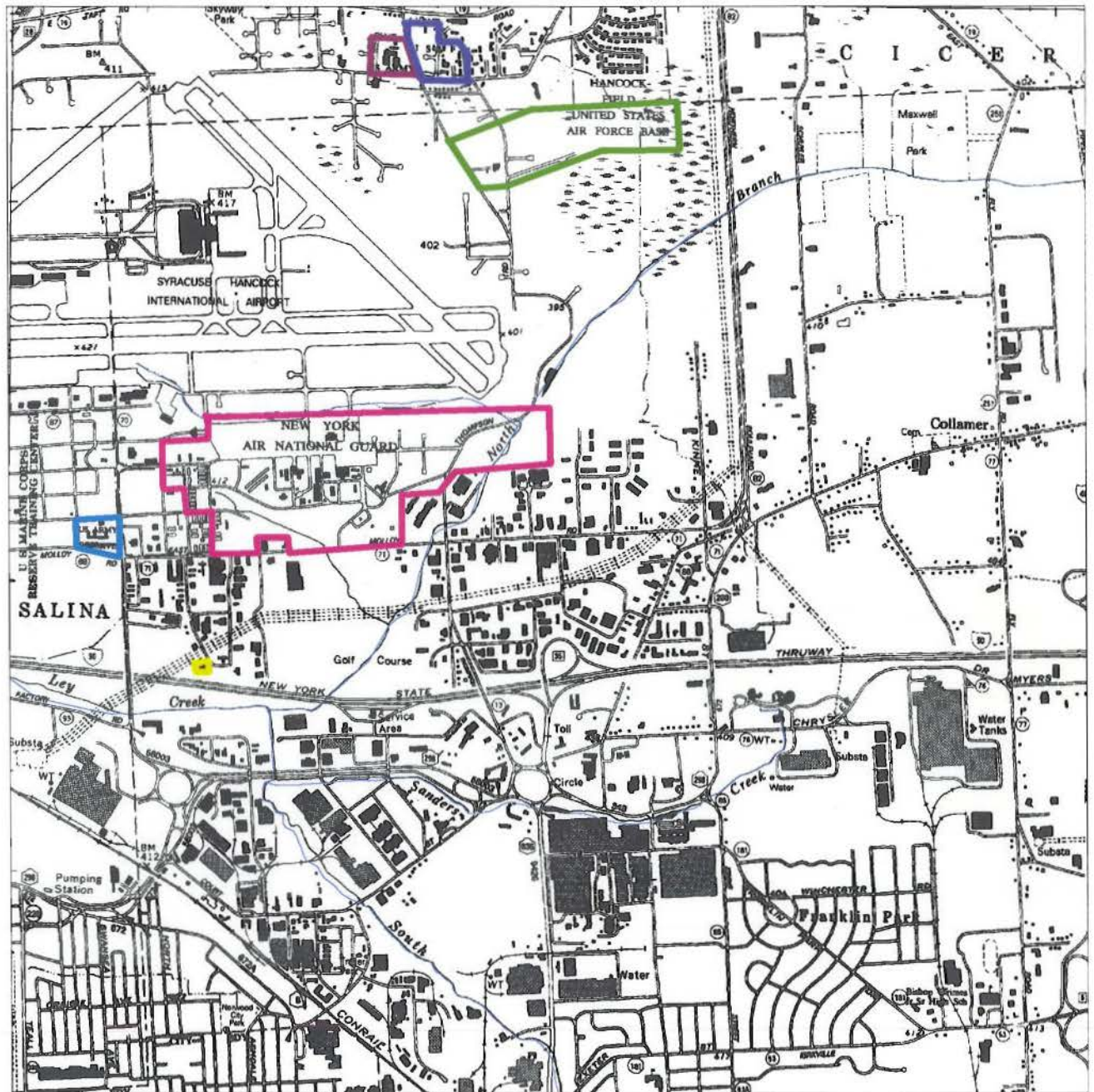
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12. Science Applications International Corporation. April 1990. Final Decision Document for Zone 2: Disposal Sites D-1 and D-3.
13. Science Applications International Corporation. April 1990. Final Decision Document for Site FT-1, Fire Training Area.
14. Science Applications International Corporation. April 1990. Final Decision Document for Site D-5: Landfill Disposal Area.
15. Closure Report, Pesticide Storage Area - Site 6. 174th Fighter Wing, New York Air National Guard, Hancock Field, Syracuse, New York. January 1997.

Department of Defense Syracuse Facilities Location Map

-  Hancock Field - NY Air National Guard Tract I
-  Hancock Field - NY Air National Guard Tract II
-  Hancock field - Air National Guard Tract III
-  U.S. Army Sage Complex
-  Seward Armed Forces Reserve Center
-  Area Maintenance Support Activity #9 Facility
-  Tributaries



New York State
Department of Environmental Conservation
November 1999



0.2 0 0.2 0.4 Miles